countries were selected according to the following criteria: similar 12-month prevalence of mental health disorders, similar results for negative mental health (SF-36 questionnaire) and similar standardized death rates for suicide.

Results Portugal had the highest overall utilization of antidepressants and AHS in 2011, amounting to 110.7 DHD, and the highest increase in utilization of AHS (1.8%) from 2003 and 2011. Concerning antidepressants, Portugal had the third highest utilization of these drugs in 2011 (78.3 DHD). Regarding the more detailed comparative analysis, utilization of AHS was still significantly higher in Portugal. Considering antidepressants, Portugal experienced an increasing utilization, which grew by approximately 11.4% from 2003 and 2008. From 2009 onward the utilization increased but at a slower pace.

Conclusion The very high utilization of these drugs, especially of AHS, is a worrying fact since this might indicate an inadequate treatment choice for anxiety and depressive disorders. Further research is needed to better understand the relationship of these findings with regulations concerning utilization of psychotropic drugs and compliance with best medical practices between distinct European countries.

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EW440

Blonanserin augmentation in patients with schizophrenia – who is benefited from blonanserin augmentation?: An open-label, prospective, multicenter study

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Introduction Evidences for antipsychotics augmentation for schizophrenic patients with suboptimal efficacy have been lacking although it has been widespread therapeutic strategy in clinical practice.

Objectives The purpose of this study was to investigate the efficacy and tolerability of blonanserin augmentation with an atypical antipsychotics (AAPs) in schizophrenic patients.

Methods A total of 100 patients with schizophrenia partially or completely unresponsive to treatment with an AAP recruited in this 12-week, open-label, non-comparative, multicenter study. Blonanserin was added to existing AAPs which were maintained during the study period. Efficacy was primarily evaluated using Positive and Negative Syndrome Scale (PANSS) at baseline, week 2, 4, 8, and 12. Predictors for PANSS response ($\geq$ 20% reduction) was investigated.

Results The PANSS total score was significantly decreased at 12 weeks after blonanserin augmentation (-21.0 ± 18.1, $F = 105.849$, $P < 0.001$). Response rate on PANSS at week 12 was 51.0%. Premature discontinuation was occurred in 17 patients (17.0%) and 4 patients among them discontinued the study due to adverse events. Nine patients experienced significant weight gain during the study. Response to blonanserin augmentation was associated with severe (PANSS > 85) baseline symptom (OR = 10.298, $P = 0.007$) and higher dose (> 600 mg/day of chlorpromazine equivalent dose) of existing AAPs (OR = 4.594, $P = 0.014$).

Conclusions Blonanserin augmentation improved psychiatric symptoms of schizophrenic patients in cases of partial or non-responsive to an AAP treatment with favorable tolerability. Patients with severe symptom despite treatment with higher dose of AAP were benefited from this augmentation. These results suggested that blonanserin augmentation could be an effective strategy for specific patients with schizophrenia.

Disclosure of interest The authors have not supplied their declaration of competing interest.

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Nicotinic acetylcholine receptor antagonists for treatment-resistant depression: A meta-analysis

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Objective Emerging preclinical and clinical evidence suggests a potential role of nicotinic acetylcholine receptors in the pathophysiology of depression. Several clinical trials have investigated the efficacy of nicotinic acetylcholine receptor antagonists in treatment-resistant depression. We performed this meta-analysis to investigate whether nicotinic acetylcholine receptor antagonists significantly improve symptoms in patients with major depressive disorder who have an inadequate response to standard antidepressant therapy.

Methods A comprehensive literature search identified 6 randomized controlled trials. These 6 trials, which included 2067 participants, were pooled for this meta-analysis using a random-effects model.

Results Nicotinic acetylcholine receptor antagonists failed to show superior efficacy compared to placebo in terms of the mean change in the Montgomery-Asberg Depression Rating Scale (MADRS) score [mean difference = –0.12 (95% CI = –0.96 to 0.71); response rate (risk ratio [RR] = 0.92 (95% CI = 0.83 to 1.02)); and remission rate [RR] = 1.01 (95% CI= 0.83 to 1.23)].

Conclusion This meta-analysis failed to confirm preliminary positive evidence for the efficacy of nicotinic acetylcholine receptor antagonists in treatment-resistant depression. Further studies investigating the efficacy of various alternative treatment strategies for treatment-resistant depression will help clinicians to better understand and choose better treatment options for these populations.

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